

**REGULATIONS**  
**on holding tactical unmanned aerial vehicle crews' competition "Falconry"**  
**within the frame of the "International Army Games - 2019"**

**I. GENERAL PROVISIONS**

1. The present Regulation defines purpose, goals, objectives, arrangement procedure for tactical unmanned aerial vehicle crews' competition "Falconry" (henceforth referred as the Competition).

The Regulation includes:

- Competition goals and objectives.
- Competition arrangement.
- Competition procedure.
- Procedure for distributing places during stages and final places in the Competition.

**1. Competition goals.**

- To strengthen international military and military-technical cooperation between Competition participants.
- To check UAV crews' skills of preparing and properly operating weapons and military equipment.
- To summarize and introduce advanced combat training experience.
- To raise the prestige of military service in UAV branch units.

**Competition Objectives.**

- To evaluate UAV crews' professional qualification.
- To check UAV crews' readiness for fulfilling combat tasks.
- To define the best UAV crews' according to the Competition results.
- To define directions for further UAV crews' combat training system development and perfection.

**2. Competition arrangement.**

Common management of Competition preparation and holding issues is vested on host country military authorities.

Each country sends a team of up to 9 people with their own UAV complexes to participate in the Competition.

Equipment:

- Fixed-wing UAV complex with electro-optical operational load and electric motor. Radius of operating is up to 30 km;
- AK-74 (AKC-74) assault rifle – 4 pieces (are given by Competition hosts);
- PM pistol – 4 pieces (are given by Competition hosts).

Team composition:

- team leader – 1;
- team leader's deputy (Referee) – 1;
- arbitrator – 1
- coach – 1;
- interpreter – 1;
- close action UAV crew – up to 4 people.

Teams arrive five days before the Competition starts for accommodation, teams' composition detailing, draw procedure, safety precautions briefing, examining flight area and Competition terms, preparing UAV for operating in area assigned, health check and conducting test flights.

The working languages of the Competition are Russian and English.

### **Competition hosts are obliged to**

- Prepare Competition area, establish material and technical support.
- Arrange arrival and departure, accommodation, nutrition, transport and medical support.
- Provide with meteorological data.
- Hold the Competition.
- Arrange cultural program and information support.
- Assure safety measures during the Competition.
- Provide with material and technical supplies according to participants' applications (applications are made no later than 2 months before the Competition starts).
- Provide with means for visualizing data received from UAV.

### **Referee commission composition**

- Chief Referee;
- Referees (one from each participant state);
- Arbitrators (one from each participant state);
- Technical staff;
- Secretary.

The Chief Referee is assigned by host country military authorities.

The Referee commission is responsible for preparing and holding the Competition according to this Regulation, the Regulation on Competition Refereeing and the Regulation on arrangement of the International Army Games Refereeing as well as defining results and drawing conclusions of the Competition.

Draw procedure and stages results are recorded in the form of protocols by the Referee Commission Secretary, signed by participant teams' Referees and approved by the Chief Referee.

Refereeing terms as well as Refereeing commission members' responsibilities are defined in the Regulation on "Falconry" Competition Refereeing during the "International Army Games – 2019".

### **Rights and Responsibilities of Competition participants**

Team leader is responsible for obeying this Regulation, uniform, safety precautions and day plan requirements by team members as well as for maintaining military discipline and preserving weapon and other materials in appropriate condition.

He is obliged to:

- Know contents and requirements of the Regulations and strictly follow them;
- Present all necessary documents to Competition Secretary on time;

- Inform his team about Referee commission decisions, changes in daily routine and Competition program;
- Report on time to Referee commission (Secretary) about participants dropped out of the Competition according to doctor's decision or other reasons;
- Know the results of team, draw conclusions for the day and assign objectives for the next day;
- Participate in draw procedure;
- Inform the Chief Referee about all weapon and equipment failures as well as about all the incidents in team;
- Solve all issues and problems occurred with Chief Referee's help;
- Arrange maintaining and returning of weapon, equipment and other material, checking its set completeness and operability with filing reports upon the Competition is finished.

Team leader has a right to appeal to the Referee commission orally or in writing with statements or protests.

Team leader is prohibited to:

- Interfere in Referees' job;
- Withdraw participants of the Competition without Referee commission's decision;

- Lend his help to participants during Competition stages (exercises).

Competition participants are obliged to:

- Know requirements of the Regulations and strictly follow them;
- Arrive to Competition in time with passport, military card (identity card);
- Remain in places assigned for participants, obey Competition routine and conduct standards;

- Strictly follow Arbitrators and Referees instructions, safety precautions rules;

- Report to team leader about all incidents and failures.

Competition participants have the following rights:

- Train in specially assigned places in time defined by Chief Referee;
- Address Arbitrators and Referees only upon pressing issues covering performing an exercise. In other cases, address Referee commission orally or in writing via team leader.

### **3. Competition procedure**

The Competition is divided into three stages:

**Stage one** – preparing UAV complex and carrying out daylight aerial reconnaissance sorties.

**Stage two** – carrying out daylight aerial reconnaissance sorties, artillery night fire adjustment and fire exercise.

**Stage three** – «Relay race».

This Regulation' requirements are obligatory for all the officials assigned to prepare and hold the Competition.

During the Competition it is prohibited to:

Let UAV crews' personnel conduct flights without medical check or access quiz;

Let team members, who are not performing exercise, remain at start position, control station or other elements of UAV system after time count started;

Use additional devices and equipment outside UAV set composition if it is not set in this Regulation.

The safety precautions requirements during performing fire exercise are distributed before firing start and obligatory to obey by all team members.

UAV's taking off and landing are performed only on platforms assigned for the Competition.

An exercise (stage) interrupted by technical reasons, weather conditions or other situations is to be continued or finished in the same day. If it is not possible, referee commission can make a decision about moving the competition to a next day. In that case results showed by participants on the previous day would be counted.

Penalties for exercises performed by UAV crews are considered and defined by Referee collegium before participant teams start performing exercise.

## **STAGE ONE**

### **Exercise № 1 «Preparing UAV complex for flight»**

Terms of performing: UAV complex in carrying position is situated on ground 50 meters away from deploy and take off platform. UAV crew is 5 meters away from UAV complex.

Performing procedure: Upon the Chief Referee command UAV crew moves complex to deploy and take off platform, then deploys ground control station (henceforth – GCS) and prepares UAV for taking off. As soon as ready crew performs UAV's taking off without any additional command.

Time counts from the Chief Referee command to a moment UAV reaches 100 meters altitude.

Teams are scored upon common time spent on exercise performing.

Penalty time is given for:

Poor units mount and cable connection, which led to weapon and military equipment failures – 2 minutes;

Not considering wind vector during taking off ( $\pm 20^0$ ) – 2 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

### **Exercise № 2 «Preparing complex for transportation»**

Terms of performing: GCS is deployed, taking off means are placed at taking off point and UAV is in the air 200 meters above landing point. Aerial reconnaissance area is up to 10 km<sup>2</sup> and is not further than 15 km from taking off point.

Marked objects: two military objects (tank, truck).

Performing procedure: Upon the Chief Referee command UAV crew gets aerial reconnaissance area coordinates and targets' specifications, and then

conducts object searching. As assigned objects are detected, operator records them from not less than 3 sides, reports to Arbitrator about objects' detection, their coordinates and characteristics. Then crew performs UAV landing on assigned point. After landing crew properly turns UAV into carrying position and moves it 50 meters away.

Time counts from the Chief Referee command to UAV complex crossing finish line.

Teams are scored upon common time spent on exercise performing.

Penalty time is given for:

Not considering wind during UAV landing – 2 minutes;

Not mounting or properly storing UAV units – 1 minute;

Damaging UAV or losing complex units during transportation or landing – 2 minutes;

Missing (not detecting) object – 20 minutes for each object;

Recording object from less than 3 sides – 5 minutes for each object;

Making mistake in defining coordinates for more than 100 meters (upon x or y axis) – 5 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

System elements (units) are considered as lost if they haven't crossed finish line before time count stop. Units which were taken along by crew before time stop are not considered as lost.

Exercises № 1, 2 are performed during one flight.

### **Exercise № 3 «Conducting aerial reconnaissance»**

Terms of performing: The exercise is performed in daytime. UAV complex is deployed and ready for operating. Two aerial reconnaissance areas are of up to 20 km<sup>2</sup> both and no further than 25 km away from taking off point.

Marked objects: four military objects (tank in trench, ACV in trench, camouflaged truck, MLRS CP on position).

Performing procedure: Upon the Chief referee command UAV crew gets two reconnaissance area coordinates with targets' specifications. UAV takes off and searches for objects in the first area. As assigned object is detected, operator records it from not less than 3 sides, reports to Arbitrator about object's detection, its coordinates and characteristics, and then crew continues to search for other objects.

After detecting objects in first area, during UAV getting back, Arbitrator informs crew's CO that crew's location is detected by adversary. After it crew turns GCS and other equipment into carrying position and moves to additional landing point 1 km away. In additional point crew deploys complex and continues searching for objects in the second area. After detecting objects crew conducts UAV landing, then turns UAV into carrying position and gets UAV complex to finish line.

Time count starts after UAV taking off to completing complex transportation to additional landing point's finish line.

After landing team reports to Referees all detected objects' data materials.

Teams are scored upon common time spent on exercise performing.

Penalty time is given for:

Missing (not detecting) object – 20 minutes for each;

Recording object from less than 3 sides – 5 minutes for each object;

Making mistake in defining coordinates for more than 100 meters (upon x or y axis) – 5 minutes;

Not performing exercise's physical component – 30 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

Teams are scored upon common time spent on exercise performing from moment of getting flight assignment to UAV landing in assigned point. If none of objects was detected, team gets last place in the exercise.

#### **Exercise № 4 «Escorting column on march»**

Terms of performing: Column movement route duration is up to 10 km, average speed is 30 km/h. Route is divided into sectors with one reconnaissance object in each.

Objects for detection:

Raiding force in ambush (RF);

RF vehicle in ambush area (200-500 meters away from RF);

Logjam on road made of automobile's tires;

Non-moving vehicle on road interfering with column movement;

Injured man lying on the road.

Performing procedure:

UAV complex is deployed and ready for operating; UAV is in the air over column. Movement route is divided into sectors with one reconnaissance object in each. Upon the Chief Referee command column starts moving. Reaching sector border column stops and awaits UAV reconnaissance results. UAV crew starts sector reconnaissance. After detecting target, crew reports to Arbitrator target's coordinates and characteristics. Then column continues movement to next sector border.

During column stops for logjam removal, by-passing non-moving vehicle and holding off an RF attack, UAV remains above column and controls its actions. Moreover, time count stops until column continues movement.

Conducting reconnaissance is prohibited:

During column movement;

During column stops for logjam removal, by-passing non-moving vehicle and holding off an RF attack.

Exercise time counts from column movement start to first column vehicle crossing finish line.

Penalty time is given for:

Conducting reconnaissance before column stops at sector border – 10 minutes;

Making mistake in defining coordinates for more than 100 meters (upon x or y axis) – 5 minutes;

Missing (not detecting) object – 20 minutes for each;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

## **STAGE TWO**

### **Exercise № 1 «Search and destroy»**

Terms of performing: The exercise is performed in night-time. UAV complex is deployed and ready for operating. Target is a hypothetical object for firing. Artillery fire imitation means are 120 mm mine explosion imitators.

Performing procedure: Upon the Chief Referee command crew gets flight assignment with reconnaissance area coordinates and object's specifications. Then UAV takes off and starts searching for object in assigned area. Upon detecting a target crew reports to Arbitrator targets coordinates and crew's readiness to conduct fire adjustment. Three imitation means are exploded with interval of three minutes. After each explosion UAV operator records them and sends reports about their coordinates. After reporting third explosion coordinates crew gets UAV back to the landing area and performs UAV landing.

Time is counted from UAV taking off to UAV landing in assigned point.

Teams are scored upon common time spent on exercise performing.

Penalty time is given for:

Not detecting assigned object – 10 minutes;

Making mistake in defining coordinates for more than 100 meters (upon x or y axis) – 5 minutes;

Not recording mine explosion – 10 minutes for each mine;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

### **Exercise № 2 «Aerial support»**

Terms of performing: The exercise is performed in night-time. UAV complex is deployed and ready for operating. Assigned unit (up to 12 people) is 2- 3 km away from UAV crew.

Adversary unit (3 groups of 8 people and 2 automobile vehicles).

Performing procedure: Upon the Chief Referee UAV crew gets assigned unit area's coordinates, conducts UAV taking off and gets it to the assigned area. In the assigned area crew detects the assigned unit and conducts searching for the adversary unit. During searching operator reports to Arbitrator fire position coordinates of three adversary groups and gives direction of the assigned unit safe getting out of ambush. Then crew performs UAV landing in assigned point.

Assigned unit actions: Upon the Chief Referee command the assigned unit starts movement on route, upon getting into the ambush (under fire) group leader

reports about firing and arranges returning fire. Upon UAV crew report, it conducts retreatment in the given direction.

Adversary unit actions: before exercise starts unit falls into ambush positions, upon the assigned unit approach opens fire.

Time counts from getting flight assignment to UAV landing in the assigned point.

Penalty time is given for:

Not detecting the assigned unit before it gets into ambush y – 35 minutes;

Not detecting fire (adversary) group – 5 minutes for each;

Mistake in defining fire point coordinates for more than 50 meters upon distance and more than 20 degrees upon azimuth – 5 minutes

Giving wrong direction of safe getting out of ambush – 20 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

### **Exercise № 3 «Find and report»**

Terms of performing: The exercise is performed in night-time. UAV complex is deployed and ready for operating. Aerial reconnaissance area of up to 20 km<sup>2</sup> is not more than 25 km away from taking off point.

Marked objects: Four military objects: tank in trench, ACV in trench, camouflaged truck, MLRS CP on position.

Performing procedure: Upon the Chief referee command UAV crew gets reconnaissance area coordinates with targets' specifications. UAV takes off and searches for objects in the assigned area. As assigned object is detected, operator records it from not less than 3 sides, reports to Arbitrator about object's detection, its coordinates and characteristics, and then crew continues to search for other objects. After detecting and reporting upon forth object coordinates and characteristics crew reports upon finishing operation, gets UAV back to starting area and conducts landing in assigned point.

Reconnaissance time is limited with 1 hour. Time count starts as UAV crosses area entering point. When time is out and all reconnaissance objects are not detected, Arbitrator commands crew to get UAV to landing point.

Teams are scored upon common time spent on the exercise performing from getting flight assignment to UAV landing in the assigned area. If none of objects was detected, team gets last place in the exercise.

Penalty time is given for:

Missing (not detecting) object – 20 minutes for each;

Recording object from less than 3 sides – 5 minutes for each object;

Making mistake in defining coordinates for more than 100 meters (upon x or y axis) – 5 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

### **Exercise № 4 «Crew's shooting for result»**

#### **Fire task «Firing from AK-74 assault rifle»**



Only 4 registered crew members are allowed to participate. Participants' substitution during the stage is prohibited. Weapon set (4 assault rifles) is given to crew according to separate draw procedure results. Crew members get weapon ready for combat and perform shooting for result.

Weapon and ammunition requirements:

5.45-mm assault rifle AK-74 or its analogs;

Ammunition of one type.

Terms of shooting:

Target: shooting target № 4 chest figure with rounds;

Distance to target: 100 meters;

Time for shooting: according to last shot, but not more than 10 minutes;

Shooting posture: prone position with a support, single shooting mode;

Ammunition amount: 10 rounds

Performing procedure: AK-74 rifles are on shooting range line. Getting ready for shooting is limited with 3 minutes. Weapon belt is allowed to be used if it is not unfastened from weapon. Each shooter gets 10 rounds.

After shooting is finished, participants move to shooting marks to inspect them.

As shooting is finished, Arbitrator commands to unload weapon and inspect it. During exercise performance, participant acts without any additional commands. For fixing any stoppages and malfunctions participant is allowed to use other person help with Arbitrator resolution. Late-coming for exercise start participants are not allowed to perform shooting.

All shots are scored regardless they were made willingly or occasionally. If shot is made outside shooting range, participant is disqualified from competition.

If shooting is stopped for reasons beyond participants' control, they have a right to repeat it from the same posture they had during stoppage. This doesn't concern shooting breaks due to participants' fault so they won't be given additional time for shooting.

Fire task is scored according to sum of stricken points.

If points' sum is equal, favor is given to crew which spent less time for exercise performing. If shooting mark has more than 10 holes (shooting on wrong mark), best holes are not counted. Only 10 holes starting from the worst are counted.

Hole in figure with lined rounds is scored according to the nearest round line. If hole only touches round line, it anyway scores highest point. If round line is hit or within round there is a hole, than it is considered a score. Radials from hole which touch round line are not considered.

A holes' scoring is made by no less than two Arbitrators. If they cannot agree, final decision is made by the Chief Referee. Referee commission decision upon holes' scoring is final and could not be protested.

**Fire task «Firing from PM pistol»**

Only 4 registered crew members are allowed to participate. Participants' substitution during stage is prohibited. Weapon set (4 PM pistols) is given to crew

according to separate draw procedure results. Crew members get weapon ready for combat and perform shooting for result.

Weapon and ammunition requirements:

PM pistol or its analogs;

Ammunition of one type.

Terms of shooting:

Target: shooting target № 4 chest figure with rounds on plate 0.75x0.75 meters, set on eye level, non-moving;

Distance to target: 25 meters;

Time for shooting: according to last shot, but not more than 3 minutes;

Shooting posture: standing position;

Ammunition amount: 3

Fire task is scored by sum of stricken points.

Amount of stricken points is defined only by rounds, which hit the figure. If shooting target has more than 3 holes (shooting on wrong target), best holes are not counted. Only 3 holes starting from the worst are counted.

The exercise is scored by summing stricken points in each fire task.

Hole in figure with lined rounds is scored according to the nearest round line. If hole only touches round line, it anyway scores highest point. If round line is hit or within round there is a hole, than it is considered a score. Radials from hole which touch round line are not considered.

A holes' scoring is made by no less than two Arbitrators. If they cannot agree, final decision is made by Chief Referee. Referee commission decision upon holes' scoring is final and could not be protested.

Penalty time is given for:

Violating safety precautions during UAV taking off – takes last time score in the exercise.

### **STAGE THREE «Relay race»**

Three teams which occupied places from 1 to 3 according to Stages One and Two participate in Stage Three.

Terms of performing: Three reconnaissance areas are of 9-20 km<sup>2</sup> at the distance from 10 to 30 km away from taking off point. One reconnaissance object is in each area. UAV complex is in carrying position 50 meters away from the deployment point.

Performing procedure: Upon the Chief Referee command crew moves UAV complex to deployment point, deploys it, gets ready for operating and conducts UAV taking off. Then crew gets UAV to assigned point and performs object searching. After detecting object crew records it from no less than 3 sides, defines its coordinates and lands UAV at landing point. Then crew conducts second UAV taking off and gets it to next reconnaissance area, continues searching for objects. Upon detecting object in the second area and recording it, crew lands UAV on landing point and performs third UAV taking off, continues searching in the third area, after detecting and recording it gets UAV back.

Next UAV taking off is performed as soon as previous one touches ground.

After third UAV landing crew turns UAV and flight control station into carrying mode, properly mounts units and moves complex at the distance of 50 meters.

Time is counted from the Chief Referee command to moment of complex crossing finish line.

After landing team reports to Refereeing all collected data upon objects.

Teams are scored upon common time spent on exercise performing.

Penalty time is given for:

Missing object (not detecting, not recording) – 30 minutes for each;

Recording object from less than 3 sides – 5 minutes for each object;

Mistake in defining fire point coordinates for more than 50 meters upon distance and more than 20 degrees upon azimuth – 5 minutes;

Violating safety precautions during UAV taking off – takes last time score in the exercise.

#### **4. Procedure of defining Competition winners and prize-winners**

Summing-up of the Competition is arranged and held by the Chief Referee.

Competition leadership, Referee commission and Competition participants are present at the summing-up. Other specialists could be invited if needed.

Summing-up is made on the basis of day (exercises, stages) result conclusions, Arbitrators and Referees observations (records) upon Competition participants' actions.

During estimating results of Competition stages places are distributed according to sum of places of all exercises within stage.

The best team is defined upon least sum of places got by UAV crews in three stages.

The best crew is defined upon Stage Three "Relay Race" results. Additionally participants are scored and awarded in "Best operator (pilot)", "Best technician", "Best shooter" nominations.

### **5. OUTCOMPETITION PROGRAM**

#### **Photo contest**

Team presents 4 photos in digital form (color or black-and-white in A4 format). Theme of photos should cover UAV crew activities on service.

#### **Movie contest**

Team presents one movie about UAV unit activities up to 12 minutes' length.

#### **Musical «karaoke-contest»**

Teams prepare two songs on military theme and one additional song.

## **Competition training field composition**

### **1. Command point.**

Material:

places for the Chief Referee, team Referees and Secretary;

means of UAV data visualization;

means of communication with Arbitrators and UAV crews;

means of recording (audio/video) of the discussions and Referee commission decisions.

### **2. Room (class) for performing briefings (including safety precautions and before flight briefings).**

Material:

required amount of tables and chairs according to all teams' composition;

multimedia equipment, office automation;

means of recording (audio/video) of the briefings.

### **3. Places (separate room, tent) for team with UAV complex.**

Material:

power supply for UAV batteries;

tables and chairs for filling in the documents and preparing UAV.

### **4. Platform for UAV complex (GCS) preparing for flight.**

Material:

two (three) 4x4 m concrete (bitum, soil) platforms;

means of recording (audio/video) of the crews and Arbitrators actions.

### **5. UAV taking off (landing) platform.**

Two (three) 100x100 m soil platforms without bushes, trees and water. Minimal distance from landing platform border to the nearest obstacle is 30 m, to the nearest power lines - 300 m.

According to teams' application taking off/landing platform location and size could be changed by Referee collegium decision before stages start.

### **6. Targets' composition.**

Automobile and armored vehicles (camouflaged) by Referee collegium decision and in accordance with Competition hosts.

### **7. Shooting range.**

Material:

required amount of AK-74 rifles, PM pistols and ammunition;

required amount of shooting marks № 4 (chest figure with rounds);

equipment and targets for getting weapon ready for combat.